

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for cooling and atomizing liquid or pasty substance or mixture of substances, ~~in which~~ wherein a liquid or pasty substance/mixture of substances is combined with gaseous carbon dioxide, and the mixture of liquid or pasty substance/mixture of substances and gaseous carbon dioxide is then expanded and cooled by contacting a flux of liquid carbon dioxide, as a result the substance/mixture of substances is cooled and atomized.

Claim 2 (Currently Amended): The process according to claim 1, ~~in which~~ wherein the liquid carbon dioxide has a pressure of from 6 to 72 bar and a temperature of 216 to 304 K.

Claim 3 (Currently Amended): The process according to claim 1, ~~in which~~ wherein the liquid carbon dioxide has a pressure of from 30 to 70 bar and a temperature of from 230 to 304 K.

Claim 4 (Currently Amended): The process according to claim 1, ~~in which~~ wherein the gaseous carbon dioxide has a pressure of from 50 to 68 bar and a temperature of from 291 to 301 K.

Claim 5 (Currently Amended): The process according to claim 3, ~~in which~~ wherein the gaseous carbon dioxide in the storage vessel has a pressure of from 1 to 10 bar and a temperature of from 273 to 304 K.

Claim 6 (Currently Amended): The process according to ~~one of claims 1 to 5~~ claim 1, ~~in which~~ wherein the liquid or pasty substance/mixture of substances and/or the mixture of liquid or pasty substance/ mixture of substances and gaseous carbon dioxide is or are fed to at least one heatable or coolable line.

Claim 7 (Currently Amended 1): The process according to claim 1, ~~in which~~ wherein the final average particle size is comprised in a range between 2 and 100 μm .

Claim 8 (Currently Amended): The process according to claim 7, ~~in which~~ wherein the final average particle size is comprised in a range between 40 to 80 μm .

Claim 9 (Currently Amended): The process according to claim 8, ~~in which~~ wherein the final average particle size is comprised in a range between 5 and 15 μm .

Claim 10 (Currently Amended): The process according to ~~one of claims 1 to 9~~ claim 1, ~~in which~~ wherein the liquid or pasty substance/mixture of substances is mixed with the gaseous carbon dioxide in the storage vessel by means of a stirrer disposed in such vessel.

Claim 11 (Currently Amended): An apparatus for cooling liquid or pasty substance or mixture of substances, which comprises:

(a) a storage vessel for the liquid or pasty substance/ mixture of substances, to which is allocated a line, ~~in which~~ wherein a device for transporting the liquid or pasty substance/ mixture of substances is disposed[[,]];

(b) a source of liquid carbon dioxide, to which source is allocated a line[[,]];

(c) a source of gaseous carbon dioxide, to which source is allocated a line which line has a connection with the line transporting the liquid or pasty substance/ mixture of substances[[],]; and

(d) an expansion chamber in which the liquid carbon dioxide and the liquid or pasty substance/mixture of substances mixed with the gaseous carbon dioxide are conveyed.

Claim 12 (Currently Amended): The apparatus according to claim 11, ~~in which~~ wherein an apparatus for heating or cooling the line is disposed in the line allocated to the source of gaseous carbon dioxide.

Claim 13 (Currently Amended): The apparatus according to ~~claims 11 to 12~~ claim 11, wherein the source of gaseous and liquid carbon dioxide is contained in a thermostated cabinet.

Claim 14 (Currently Amended): The apparatus according to ~~one of claims 11 to 13~~ claim 11, ~~in which~~ wherein an apparatus for heating or cooling the line is allocated to the line allocated to the storage vessel for the liquid or pasty substance/mixture of substances.

Claim 15 (Currently Amended): The apparatus according to ~~one of claims 11 to 14~~ claim 11, ~~in which~~ wherein an apparatus for mixing is allocated to the storage vessel for the liquid or pasty substance/ mixture of substances.

Claim 16 (Currently Amended): The apparatus according to ~~one of claims 11 to 15~~ claim 11, ~~in which~~ wherein the expansion apparatus has two nozzles and two valves.

Claim 17 (Currently Amended): The apparatus according to ~~one of claims 11 to 16~~
claim 11, ~~in which~~ wherein the nozzles and the valves have an isolating coating.

Claim 18 (Currently Amended): The apparatus according to ~~one of claims 11 to 17~~
claim 11, ~~in which~~ wherein the nozzle is a capillary flow nozzle or a spraying (nebulizing)
nozzle.

Claim 19 (Currently Amended): The apparatus according to ~~one of claims 17 to 18~~
claim 17, ~~in which~~ wherein the valve is an open/closed valve or a control valve.

Claim 20 (Currently Amended): The ~~use of the~~ process according to claim 1 or of the
apparatus according to claim 11 for pulverizing, pelleting, granulating and crystallizing.

Claim 21 (Currently Amended): The ~~use of the~~ process according to claim 1 or of the
apparatus according to claim 11 for the production of microparticles for pharmaceutical uses.

Claim 22 (Currently Amended): The ~~use of the~~ process according to claim 1 or of the
apparatus according to claim 11, wherein the microparticles contain one or more therapeutic
active substances.